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An Essay on Railroad Accounting with Relation to the Organization

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AN ESSAY ON RAILRAOD ACCOUNTING WITH RELATION

TO THE ORGANIZATION

BY

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THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

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BIBLIOGRAPHY.

Bean, B. C. - The Cost of Production. New York, 1905.

Bunnell, Sterling H.- Cost-Keeping for Manufacturing Plants, New York, 1911

Dewsnup, Ernest R. - Railway Organization and Working. (Published by the University of Chicago Press, 1906)

Hatfield, H. R. - Modern Accounting. New York, 1909.

The Interstate Commerce Commission's Classification of Operating Expenses, 1908.

The Interstate Commerce Commission's Classification of Operating Revenues, 1908.

The Interstate Commerce Commission's Form of General Balance Sheet Statement, 1910.

The Illinois Central Railroad Company's Classification of Operating Expenses, 1907.

Johnson, Emory R. - American Railway Transportation. New York, 1908.

Johnson, Emory R. - Railroad Traffic and Rates. New York, 1911.

McPherson, Logan G. - The Working of the Railroads. New York, 1907.

Morris, Ray - Railroad Administration. New York, 1910.

The Rock Island Central Railroad Company's Classification of Operating Expenses, 1907.

Whitehead, H. C. - The Railway Auditor. (Published by New York University School of Accounts and Finance, 1907)

Woodlock, Thomas F. - The Anatomy of a Railroad Report and Ten-Mile Cost. New York, 1909.

CHAPTER I.

INTRODUCTION.

Railways perform the function of transportation of either passengers or goods from one place to another on land. They are recognized as absolutely necessary to modern civilization politically, commercially, and industrially. Railways make cheap transportation possible, and thus assist in equalizing prices throughout a large community and make wide markets possible. In this way they stimulate production. For instance: the fruits produced in California can be found in the Eastern market today; the clothes made in New York are sold in San Francisco. It is evident that with the development of transportation as performed by railways the self-sufficing community of the mediaeval age comes to an end. The existence of a community to a large extent depends upon the charges a railway makes to carry all its products to a market. As a result the people have, through the government, insisted upon their right to regulate to a large extent the policies of the railroads in regard to freight and passenger charges. The semi public character of the relations of a railroad makes it necessary that all of its financial relations be known in order that justice may be rendered to both the road owners and the

public whenever there is a conflict of interest between the railroad and the shippers or the general public. On account of this peculiar position of the railways they have for many years been required to publish financial statements showing their Incomes and Expenditures and Balance Sheets.

Notwithstanding the elaborateness of the printed railway reports, railway companies have not as yet given us an accurate basis for determining what constitutes fair charges for different classes of freight. In fact we cannot even tell from the railway accounts what are the returns of the various great classes of business carried on by the roads. It shall be the object of this paper to discuss the present accounting methods of American Railways, and then offer some suggestions as to how railroad accounting might be improved in order to present really accurate information to the public.

A railroad today means not only a roadbed but also the equipment and the necessary stations for both freight and passenger service. In order to furnish these, the railroad companies are forced to maintain their own telegraph lines, their own repair and often their own construction shops, their own elevators, their own docks and ferries. Some large railroad companies even own forests and coal mines for convenience in getting supplies of ties and coal. It is now evident that in order to carry out the primary function of transportation, it is necessary

to discharge other functions efficiently, such as the operating of the telegraph lines, of the repair shops and of the others.

The functions of a railroad are so complicated that they require a complicated organization. The railroad companies are all corporations organized under either a special or general charter for the purpose of selling transportation. The stockholders are the owners of the company. They elect directors to represent them. The directors in turn elect the president and other important officers who, through the chief executive, are responsible for the company as a whole. In discharging his duty, the president delegates his power to the vice-presidents, the general manager, the superintendents, and other subordinates. Thus an unbroken line of responsibility from the lowest subordinate to the president is secured.

Although there are differences in organization between different companies, the main divisions are the same. There are four general divisions which are observed by companies, namely, the legal, financial, traffic, and operating departments. The head of each department is often a vice-president. The services of each department are conducted in detail by subdivisions. The Rock Island Railroad Company consists of the following departments: Executive, law, treasury and secretarial, accounting, insurance, mining, employee's magazine, operating, purchasing, engineering, passenger

traffic and freight traffic. Each department is organized in such a way that it conducts its services in maximum efficiency. It is not within the scope of this paper to describe the organization of each department in detail, because this paper is chiefly concerned with accounting problems. Therefore the only organization of the accounting department should be presented in detail.

The accounting department of a railroad is in some respects the most important one of all departments, because its relations are closely connected with every other department. This department is usually headed by a comptroller who is under the supervision of a vice-president. It is the duty of the comptroller to unify the work of the accounting and treasury departments. He should devise ways of keeping record of all receipts and expenditures concerning the road. The comptroller is assisted by a large staff of auditors and clerks who audit the accounts of all departments and keeps their records. In other words, the accounting department gathers and analyzes all the information relating to all the other departments. In addition to keeping the account of the financial operations the comptroller gathers all the other reports which either directly or indirectly relate to the receipt and expenditure of money either in the Income Account or Capital Account. The Accounting Department is so important that it is no exaggeration to call it the backbone of a railroad company.

Every year the railroads spend tens of millions

of dollars in order to carry on their operations. A great many of these expenditures are for merely keeping the road running. There are, however, a great many other payments made which add permanent assets to the roads. In order to clearly show to the public just how its money is expended all the railroad's accounts are finally expressed in one of two general divisions, viz., The Income or Revenue Account and the Balance Sheet.

CHAPTER II.

THE INCOME ACCOUNT.

The Income Account often has other names applied to it, such as Revenue, Profit and Loss, or Loss and Gain, but in railroad practice the term Income Account is uniformly used. This account summarizes all other accounts which are connected with the changes in the net wealth of the corporation resulting from operations. The time covered by the Income Account is almost invariably the fiscal year. It is designed to show to the stockholders and public in briefly summarized but accurate form the true condition of the road's earning capacity. Since the Income Account serves such an important purpose, all the financial public should have some means of seeing that they are honestly kept because otherwise there is ample room for manipulation. For instance: if a railroad wants to sell more securities, it may charge some item of expense to the Capital Account instead of against Operating Expenses. In this way a large fictitious profit may be shown and the public be deceived into investing money in an unsafe enterprise. Money may be spent either in buying new properties, in making improvements on old properties, in simply maintaining the usual operating condition of the road, or to carry on the running expenses of the organization. There is a vast difference in the effect of these expenditures to make wealth of the road

and it is exceedingly important that nothing be improperly recorded or disastrous results may follow.

Railroad companies in the course of many years have developed a form of statement for the general Income Account. The Inter-state Commerce Commission has crystallized this experience into a standard from which it is now in use by the roads throughout the country.

Form

Operating Expenses	Transportation Revenue
Maintenance of Way and Structure	Freight
Maintenance of Equipment	Passenger
Traffic	Mail
Transportation	Express
General	Milk
	Switching
	Bridge Tolls
	Other
Other than Operating	**Other Than Transportation**
Taxes	Rents of Track
Rentals of Lines	Rents of Property
Interest Charges	Dining Cars
Discount on Securities	Interest on Stocks and Bonds owned
Miscellaneous	
Balance to Profit and Loss	

Profit & Loss

Depreciation	Balance
Dividends	
Balance to Surplus	

The Operating Division of the Income Account is an important section to a railroad report because it is most susceptible manipulation. If the Operating Expenses are well classified and properly recorded, the action of the managers of the property can be clearly seen. In order to prevent the public from being misled some definite rules must be established for the treatment of the Operating Expenses, viz: all those expenditures which are made for the purpose of keeping up the condition of the road to that of the previous year should be charged to that account. Then, according to the rule, money spent either to improve the condition of the property or to make new purchases should be charged to the Capital Account, but this rule is not strictly followed by most roads. The tendency prevailing today is to charge to the Operating Account all those expenditures which are used in making improvements or in purchasing new additions and do not result in increasing the gross revenue nor reducing the Operating Cost. It is, however, often a hard problem to determine whether or not an expenditure will increase the earning power of the road. Accountants and managers with the most honest intentions will frequently disagree. The Inter-State Commerce Commission has taken much time to develop rules for the proper handling of expense accounts. It has first of all divided the Operating Expenses into five classes:

1. Maintenance of Way and Structures.
2. Maintenance of Equipment.

3. Traffic Expenses.

4. Transportation Expenses.

5. General Expenses.

Under these main headings which became effective July 1, 1908 are a great many sub-divisions in each class. The number classified for small carries is 44, and that for large ones is 116. Though the Inter-State Commerce Commission prescribes all railroad companies to keep their records in conformity with the classification of the Commission, the individual companies have been allowed the privilege of dividing the accounts into such sub-accounts as are deemed expedient for their purpose. Thus for instance the Inter-State Commerce Commission account Roadway and Track under Maintenance and Way and Structure is divided into Ditching and Embanking, Applying Ballast, Applying Ties, Applying Rails, Removal of Grass, Weeds, etc., General Repairs of Roadway and Track, Extraordinary Repairs of Roadbed and Track, and Water Front Protection by the Illinois Central Railroad Company. When, however, the Illinois Central Railroad Company sends its reports to Washington it groups all the items under Roadway and Track into the Commission's Classification.

MAINTENANCE OF WAY AND STRUCTURE carries twenty-three accounts, viz:

Superintendence.
Ballast.
Ties.
Rails.
Other Track Material.
Roadway and Track.
Removal of Snow, Sand, and Ice.

Tunnels.
Bridges, Trestles, and Culverts.
Over and Under Grade Crossings.
Grade Crossings, Fences, Cattle Guards, and Signs.
Snow and Sand Fences and Snowsheds.
Signals and Interlocking Plants.
Telegraph and Telephone Lines.
Electric Power Transmission.
Buildings, Fixtures, and Grounds.
Docks and Wharves.
Injuries to Persons.
Roadway Tools and Supplies.
Stationery and Printing.
Other Expenses.
Maintaining Joint Tracks, Yards, and Other Facilities - Dr.
Maintaining Joint Tracks, Yards, and Other Facilities - Cr.

The important ones are Ballast, Ties, Rails, Roadway and Track, Signals and Interlocking Plants, Telegraph and Telephone Lines and Electric Power Transmission.

MAINTENANCE OF EQUIPMENT has twenty-nine accounts, viz:

Superintendence.
Steam Locomotives - Repairs.
Electric Locomotives - Repairs.
Passenger-Train Cars - Repairs.
Freight-Train Cars - Repairs.
Electric Equipment of Cars - Repairs.
Floating Equipment - Repairs.
Work Equipment - Repairs.
Steam Locomotives - Renewals.
Electric Locomotives - Renewals.
Passenger-Train Cars - Renewals.
Freight-Train Cars - Renewals.
Electric Equipment of Cars - Renewals.
Floating Equipment - Renewals.
Work Equipment - Renewals.
Steam Locomotives - Depreciation.
Electric Locomotives - Depreciation.
Passenger-Train Cars - Depreciation.
Freight-Train Cars - Depreciation.
Electric Equipment of Cars - Depreciation.
Floating Equipment - Depreciation.
Work Equipment - Depreciation.
Injuries to Persons.
Shop Machinery and Tools.
Power Plant Equipment.
Stationery and Printing.
Other Expenses.
Maintaining Joint Equipment at Terminals - Dr.
Maintaining Joint Equipment at Terminals - Cr.

The important ones under this division are Locomotives, Passenger-Train Cars, and Freight-Train Cars. Each of these is sub-divided again into three accounts such as Repairs, Renewals and Depreciation. These three accounts are very closely related to each other. One always affects the other. For instance, if the Depreciation charge is great each year, then the Renewal will be small. Again, if the Repairs Account is high, the Depreciation will be low. Because of this fact each road, while it conforms to the general plan of the Inter-State Commerce Commission, adopts a more or less modification for the distribution of these expenses amongst these accounts. For example: the Rock Island Railroad Company makes the following ruling under Steam Locomotive as follows:

"Locomotive-Repairs. This account includes cost of material used (less salvage) and labor expended in repairing steam locomotives and tenders and fixtures thereof (except as otherwise provided for); such as air signal equipment including hose, arm rests, awnings, brake fixtures, cab and steam-gage lamps, cab cushions, clocks, coal boards, fire extinguishers permanently attached to locomotives, gongs, head lamps, pneumatic sand-power brakes, steam-heat appliances including hose and all other appliances of like nature, storm doors, tool boxes; also cost of supervision; pay of locomotive inspectors engaged in inspecting all parts of locomotives and tenders (except pay of smokestack and ashpan inspectors which should be charged to Account "Engine-house Expenses - Yard" or "Engine-

house Expenses - Road)," pay of employees engaged in sponging tender, driving and truck boxes of locomotives undergoing repairs in shops (but pay of employees similarly engaged on locomotives not undergoing repairs in shops should be charged to account "Engine-house Expenses-Yard" or "Engine-house Expenses-Road)," and cost of cutting up condemned locomotives and tenders; small hand tools used exclusively in locomotive repairs; special service such as bringing locomotives to shops or watching them while on the way to shops for repairs, and trying locomotives after having been repaired; traveling expenses of employees whose pay is chargeable to this account; and payment of royalties, or for patent rights on brakes, brake fixtures, and other appliances used on locomotives, also proportion of shop expenses as provided in note following "Other Expenses."

"The value of old material released during repairs, and insurance recovered should be credited to this account. This account is subdivided as follows, namely:

"(a) Running Repairs.-Cost of material used, including freight charges, if any, and labor expended in making running repairs to locomotives and tenders and in repairing furniture and fixtures thereon, including cost of renewing furniture and fixtures, such as:

Air signal equipment including hose,
Arm rests,
Awnings,
Brake fixtures,
Fire extinguishers permanently attached to locomotives,
Flag staffs,
Snow plows attached to locomotives,
Speed recorders,
Steam and other power brakes,

Cab and steam gauge lamps,	Foot boards,	Steam and water gauge lamps,
Cab curtains,	Gongs,	Steam heat appliance including hose and all other appliances of like nature,
Cab cushions,	Head lamps,	
Clocks,	Injectors,	
Coal boards,	Pneumatic sanding equipment,	
	Seat boxes,	

" (b) Classified Repairs.- Cost of material used, including freight charges, if any, and labor expended in general or classified repairs of locomotives and tenders, including trying engines after completion of repairs, cost of handling dead engines to shops for repairs, pay of employees engaged in sponging tender, driving, and truck boxes of locomotives undergoing repairs in shops, (pay of employees engaged in sponging tender, driving truck boxes of locomotives not undergoing repairs in shops shall be charged to Account No. 78 "Engine-houses, expenses-yard," or Account No. 87 "Engine-houses, expenses-road" as the case may be.

"(c) Accident Repairs.-Cost of material used, including freight charges, if any, and labor expended in repairing damage done to locomotives and tenders through accident.

"(d) Other Expenses.-Pay of locomotive inspectors engaged in inspecting all parts of locomotives and tenders at engine houses, cost of dismantling and cutting up condemned locomotives and tenders. Traveling expenses of employees whose pay is charged to this account; and payments of royalties, or for patent rights, on brakes, brake fixtures, and other appliances used on locomotives, and cost of locomotive patterns. Also all analogous expenses. "

The value of old materials recovered in connection with this account shall be credited hereto.

Steam Locomotives - Renewals:

This account includes the original cost (estimated, if not known), record value or purchase price of all steam locomotives condemned, destroyed or sold, less:

(a) amount previously charged for depreciation up to date of retirement;

(b) scrap value of salvage or the amount received from sale of steam locomotives retired.

Steam Locomotives - Depreciation:

This account includes a monthly charge of one-twelfth (1/12) of ....per cent, per annum of the original cost (estimated, if not known), record value or purchase price of steam locomotives to provide a fund for replacement when retired."

The Illinois Central Railroad on the other hand prescribes the following subdivisions under the same heading Steam Locomotives:

Steam Locomotives - Repairs

(a) Passenger Locomotives.
(b) Freight Locomotives.
(c) Switching Locomotives.

Steam Locomotives - Renewals

(a) Passenger Locomotives.
(b) Freight Locomotives.
(c) Switching Locomotives.

Steam Locomotives - Depreciation

(a) Passenger Locomotives.
(b) Freight Locomotives.
(c) Switching Locomotives.

TRAFFIC EXPENSES consists of eight accounts.

They are:

Superintendence,
Outside Agencies,
Advertising,
Traffic Associations,
Fast Freight Lines,
Industrial and Immigration Bureaus,
Stationery and Printing,
Other Expenses.

These, accounts, as their name indicates, are not so complex as others heretofore we discussed so that it is not necessary for us to discuss them further.

TRANSPORTATION EXPENSES is the largest item of the five classes both in the number of accounts and in the amount of money. It embraces forty-five items, viz:

Superintendence
Dispatching Trains,
Station Employees,
Weighing and Car-Service Associations,
Coal and Ore Docks,
Station Supplies and Expenses,
Yard Engineman,
Yardmasters and their Clerks
Yard Conductors and Brakemen,
Yard Switch and Signal Tenders,
Fuel for Yard Locomotivesm
Yard Supplies and Expenses,
Enginehouse Expenses-Yard,
Water for Yard Locomotives,
Lubricants for Yard Locomotives,
Other Supplies for Yard Locomotives,
Injuries to Persons,
Loss and Damage-Freight,
Loss and Damage Baggage,
Clearing Wrecks,
Damage to Property
Damage to Stock on Right of Way,
Interlockers and Block and Other Signals-Operation,
Crossing Flagmen and Gatemen.
Operating Joint Yards and Terminals-Dr,
Operating Joint Yards and Terminals-Cr,
Road Enginemen,
Motormen,
Fuel for Road Locomotives,
Water for Road Locomotives,
Lubricants for Road Locomotives,
Other Supplies for Road Locomotives,
Enginehouse Expenses-Road,
Operating Power Plants,
Purchased Power,
Road Trainmen,
Train Supplies and Expenses,
Drawbridge Operation,
Telegraph and Telephone-Operation,
Operating Floating Equipment,
Express Service,
Stationery and Printing,
Other Expenses,
Operating Joint Tracks and Facilities,- Dr.
Operating Joint Tracks and Facilities,-Cr.

In looking over these accounts one sees that they include all expenses incurred in connection with the business of handling, transporting, or storing freight and passengers. We can, however, simplify our study, by observing that these forty-five accounts may readily be classified under six subdivisions, viz:

Supervising Transportation	Engine Service
Station Service	Train Service
Yard Service	Miscellaneous.

Under these six subdivisions one will observe that the main changes are Salaries, Wages and Supplies.

The classification of these forty-five accounts into the six subdivisions mentioned above will be of valuable assistance to the accountant from the economic point of view. The accountant can avail himself of the expenses in each subdivision to compare them with each other so that he can know which division is being run economically and which is not. Furthermore, he can compare the expenses of the subdivision with those of previous months to find out whether the same or different managers of the various divisions are consistently efficient or not. The method of comparison gives the accountant a definite idea of the expenses as to whether or not they are properly incurred. If the expenses of one division far exceeds that of previous months it is the duty of the accountant to show the reason for such increase.

There are a number of expenses which every road must incur which are outside of the direct expenses

of operation and as a result cannot be fairly charged to any one of the above divisions or subdivisions of the Operating Account. As a result the Income Account makes provision for the inclusion of these changes under the second heading:

OTHER THAN OPERATING. The most frequently occuring items included under this heading are: TAXES, RENTALS, INTEREST CHARGES, DISCOUNT on SECURITIES, MISCELLANEOUS and the BALANCE to PROFIT and LOSS.

The six items are sometimes called "fixed charges" because the amount of business done by the road has a slight influence on their magnitude.

The TAXES account should be kept distinct from any other accounts so that the railroads can state separately in their annual reports and show the public how much they contribute to the financial support of the general public.

RENTALS include all expenses incurred on renting tracks, right of way, and other fixed property from other companies. This account should be recorded in such a detailed manner that the rentals for each piece of property can be separated from the rest.

INTEREST CHARGES embrace the money paid as interest on bonds and other debts. The distinction should be made between the money paid as interest on bonds and on other debts. Moreover, the money paid as interest on bonds should be again detailed in such a way that the amounts and kinds of bonds outstanding, and the interest thereon should be stated. The money paid as interest on other

debts should also be recorded in sufficient detail to enable one to know how much the company's debts cost to carry.

DISCOUNT ON SECURITIES usually arises through the necessity of the road marketing its evidences of debt below par. When loans must be negotiated in this way roads sometimes charge off the entire loss in the first year, but a better practice is to pro rate the discount throughout the term of the note or bond.

MISCELLANEOUS includes those expenses not specified in the items described above, and will vary with different roads. It usually includes accounts like Hire of Equipment, Betterments to leased lines and similar expenditures.

The item "Balance to Profit and Loss" is the amount of funds which is left from the total income after all expenses are paid. This amount should be carried to Profit and Loss Account.

We have now discussed the various expenses which a railroad has to meet and the system under which the various expenses are recorded, so that we can have complete information concerning the way in which the money is spent by tracing back to various accounts.

BALANCE TO PROFIT AND LOSS calls our attention to the fact that the Income Account records not only Expenses but also Revenues so that now we shall devote some attention to the Income Side of the Account.

A railroad derives its principal revenues from freight transportation and passenger transportation.

The other revenues come from baggage, storage, mail stock yards, steamers, elevators, balances of car-mileage, switching charges, and the like. These are small in amount compared with the returns from the transportation of freight and passengers, yet they aggregate millions of dollars in total. The Inter-State Commerce Commission classified all revenues into two headings, namely, Revenue from Transportation and Revenue from Operations other than Transportation. Revenue from Transportation consists of eleven accounts. They are:

1. Freight Revenue
2. Passenger Revenue
3. Excess Baggage Revenue
4. Parlor and Chair Car Revenue
5. Mail Revenue
6. Express Revenue
7. Milk Revenue (on Passenger Trains).
8. Other Passenger-Train Revenue
9. Switching Revenue
10. Special Service Train Revenue
11. Miscellaneous Transportation Revenue.

FREIGHT REVENUE includes receipts from transportation of three kinds of freight: local, interline, and foreign. Local freight begins and ends on the line. Interline freight begins on the line and ends on another line. Foreign freight begins on other line and may end on the line or be passed on to other line. Money for transportation of freight may be paid at the beginning or at the end of the trip. A part may be paid at the beginning and part at the end of the journey. In either case the total money paid must be that distribution among the roads proportional to the distance hauled or to some

specific agreement.

PASSENGER REVENUE is of three kinds: revenue from selling of tickets by station agents and collecting of fares on train by conductors and income received from other roads due to foreign traffic. There are several kinds of passenger tickets. They, like freight, can be classified as local, interline and foreign. In the case of interline and foreign tickets money is usually distributed among roads according to the number of miles hauled.

EXCESS BAGGAGE REVENUE derives from the transportation of baggage in excess of the weight which is allowed free, and of packages, articles, dogs, etc.

PARLOR AND CHAIR CAR REVENUE derives from passengers for seats in parlor, observation, chair, and other special passenger cars operated by railway companies when the expences of operating such cars are not separable from the expenses of operating trains.

MAIL REVENUE derives from the transportation of mails and for the use of railway post-office cars, special facilities, and bonuses for special mail transportation.

EXPRESS REVENUE derives from transportation and facilities on trains and at stations incident to the transportation of express matter, not including the separate rents of offices at stations.

MILK REVENUE derives from the transportation of milk and cream on passenger or special milk trains.

OTHER PASSENGER-TRAIN REVENUE is that kind of revenue incidental to the operation of passenger trains not otherwise provided for, as for example, revenues derived from the privilege which is given to newspapers' agents selling papers and magazines on trains.

SWITCHING REVENUE is quite a large sum which a great many roads owning large yard and engine facilities at certain points derive income from the handling and switching of the cars of other lines in these yards.

SPECIAL SERVICE TRAIN REVENUE derives from the handling of circus or theatrical company trains under contract when specific amounts are charged for transportation between designated stations, from the running of trains for the Federal or State governments carrying troops, munitions of war, camp outfits, etc.

MISCELLANEOUS TRANSPORTATION REVENUE includes all amounts earned by a carrier from transportation not otherwise provided for.

The above group of accounts, however, does not comprehend all the sources from which a Railroad secures income. The public directly and indirectly puts responsibilities upon the railroads so that they must engage in activities which are very closely allied to transportation and yet are not strictly speaking transportation activities as, for example, the keeping of goods in warehouses until the shippers can use them, or the serving of meals to the passengers on the trains and at the stations. In addition to these activities railroads often find it desirable to

make investments in stocks and bonds of other lines, make investments in real estate, and engage in other activities. The returns from these sources cannot be credited to Transportations so the Inter-State Commerce Commission has segregated them into a group of accounts called <u>Revenue from Operations Other than Transportation.</u> It consists of ten accounts. They are:

12. Station and Train Privileges
13. Parcel Room Receipts
14. Storage-Freight
15. Storage-Baggage
16. Car Service
17. Telegraph and Telephone Service
18. Rents of Buildings and Other Property.
19. Miscellaneous
20. Joint Facilities Revenue, Dr.
21. Joint Facilities Revenue, Cr.

STATION AND TRAIN PRIVILEGES includes revenues derived from weighing, vending, and other automatic machines located at stations, from advertising at stations and on trains, from news companies or others for the privilege of operating news stands at stations and selling papers, periodicals, fruit, etc., on trains, from telephone companies for privilege of installing and operating commercial telephones at stations, and from other sources.

PARCEL-ROOM RECEIPTS, as the name indicates, are revenues derived from the operation of parcel-rooms.

STORAGE OF FREIGHT yields revenues for storage of freight in Railroad Company's warehouses due to consignee not calling for delivery of shipment within forty-eight hours.

STORAGE OF BAGGAGE is income derived from storage of baggage left unclaimed more than twenty-four hours.

CAR SERVICE. These revenues derived from demurrage - the keeping of car for loading, unloading in excess of the time which is allowed free by the road.

TELEGRAPH SERVICE yields revenues derived from the operation of commercial telegraph business along the company's lines.

RENTS OF BUILDINGS and OTHER PROPERTY yields revenues derived from rents of buildings, land, and other property, such as depot and station grounds and buildings, general and other offices, rooms rented at stations, docks, wharves, ferry landings, elevators, stock yards, fuel yards, repair shops, etc.

MISCELLANEOUS includes revenues from operation not otherwise provided for.

JOINT FACILITIES REVENUE DEBIT AND CREDIT are two accounts which were added later by the Inter-State Commerce Commission and become effective on July 1, 1908. The purpose of these two accounts is to show the proportion of the revenues derived from operation of joint facilities that is to be credited to other companies, and what proportion of revenues from operation of joint facilities are receivable from other companies.

If a road is being carried on successfully the amount of income derived from the Transportation Operations and from the Operations Other than Transportation will

exceed the Expenditures due to Operating and Other than Operating. The excess of the credit side will be balanced by a bookkeeping entry called Balance to Profit and Loss, which is added to the Debit side of the Income Account under Other than Operating thus closing the account into the Profit and Loss division of the Income Account.

The Profit and Loss division of the Income Account merely shows how the net income of the road is apportioned.

DEPRECIATION, which can neither be classified under the head of Operating Expenses nor under that of Other than Operating, is charged off in this division although there is no good accounting reason for doing so. DIVIDENDS, as every layman knows, cannot be declared unless a road makes profit. It is now obvious that the difference between the Balance to Profit and Loss and Depreciation is profit which is earned by the road. Though theoretically the whole amount of the profit is available for dividends, the Board of Directors usually declare a reasonable percentage on the capital stock for dividends and reserves the remainder for the purpose of other use in the case of emergency. This remainder is called Balance to Surplus which makes the Profit and Loss division balance and closes the same.

CHAPTER III.

THE BALANCE SHEET.

If one wishes to know the financial standing of a road it is necessary for him to have more than a statement of its earnings. He should know the values of the properties owned and the nature and extent of the various forms of indebtedness held against these properties. On this account of their public nature the law requires that the condition of the railroad companies must be shown to the public once a year. This annual statement is made in an instrument called the Balance Sheet.

The Balance Sheet presents in two lists the balances of all the accounts which show real property held by the road and indebtedness owing outside concerns, capital liabilities and various kinds of revenues which are held by the company. No accounts which close into the Income Account appear in the Balance Sheet. All those accounts have been gathered together in the Income Account and the final balance showing either a Profit or a Loss is the only one which appears in this latter instrument.

The Balance Sheet is the goal at which an account aims. The gathering together a mass of details which are scattered in various accounts and condensing them into one account, if it may be called, are the process of working toward the Balance Sheet. Thus the Balance Sheet shows in an accurate and condensed form the condition of each account or groups of accounts

which it or they stand and the financial situation of a road as a whole as well. In other words, all the main facts which affect the changes in net wealth and the result from the operation at the time the Balance Sheet is made can be presented through this instrument succinctly and intelligibly.

On account of the function of the Balance Sheet, it is more important than the Income Account, because the former exhibits the whole condition of a road and the latter only serves the information regarding the income and expenditure.

The Balance Sheet is so important an instrument that the Inter-State Commerce Commission has also taken much time to work out a proper form in order to render the Balance Sheets of all roads uniform and therefore comparable. The form of the Commission is as follows:

Balance Sheet

Assets	Liabilities
Property Investment	Stock
Working Assets	Mortgage, Bonded, and Secured Debt
Accrued Income Not Due	Working Liabilities
Deferred Debit Items	Accrued Liabilities Not Due
Profit and Loss	Deferred Credit Items
	Appropriated Surplus
	Profit and Loss

The foregoing form, which is known as General Balance Sheet Statement, is the revision of the first issue which was promulgated under date of June 21, 1909. This

revision became effective on June 15, 1910 and is now in force. As it has been said before, the Balance Sheet is a condensed form by which the condition of a road can be shown. In most roads the above titles in the Balance Sheet will have under them a number of accounts whose nature will be self-explanatory from their names. It is customary for one to start the study of a Balance Sheet from the left side, so we shall consider item by item of the Assets first and then proceed to the discussion of Liabilities.

ASSETS.

PROPERTY INVESTMENT includes three main accounts, namely, Road and Equipment, Securites, and Other Investments.

Road and Equipment is sub-divided again into two accounts: Investment prior to June 30, 1907, and Investment since June 30, 1907. The Investments prior to June 30, 1907 show the book value of Road and Equipment as it stood on June 30, 1907. The Investments since June 30, 1907 embrace the money spent in acquiring all property, classifiable as Road and Equipment or Additions and Betterments.

Securities consists of three accounts: Securities of Proprietary, Affiliated, and Controlled Companies - Pledged Securities Issued or Assumed - Pledged Securities of Proprietary, Affiliated, and Controlled Companies- Unpledged. The first one records the cost or book value of those securities of other companies which are pledged

for the money which the company invested. The second keeps the value of securities upon which the company issues bonds for other companies. The third includes the cost or book value of unpledged securities of other companies which are controlled by the company.

Other Investments comprises two accounts: Advances to Proprietary, Affiliated, and Controlled Companies for Construction, Equipment, and Betterments; Miscellaneous Investments. The first one includes cash advanced to controlled companies to pay for construction, equipment, and additions and betterments. The other records investments of a permanent nature in physical property other than that held for the operation of the company's property as a transportation agency.

WORKING ASSETS are very important to the success of a road. If a road has carried enough Working Assets, the times of difficulty which often happen to corporations may be avoided. The accounts grouped under the heading Working Assets are Cash, Securities Issued or Assumed- Held in Treasury, Marketable Securities, Loans and Bills Receivable, Traffic and Car-Service Balances Due from Other Companies, Net Balance Due from Agents and Conductors, Miscellaneous Accounts Receivable, Materials and Supplies, and Other Working Assets.

ACCRUED INCOME NOT DUE includes Unmatured Interest from Investments, Dividends from Various Stock Holding, and Rents Receivable From Other Properties.

DEFERRED DEBIT ITEMS are either cash or property which has been actually paid or assigned at the time when

the statement is made, but the time covered by the payment or assignment has not expired. The meaning will be explained more clearly by the names of the accounts included under Deferred Debit Items. The accounts are named Advances, Rents and Insurance Paid in Advance, Taxes Paid in Advance, Unextinguished Discount on Securities, Property Abandoned Chargeable to Operating Expenses, Special Deposits, Cash and Securities in Sinking and Redemption Funds, Cash and Securities in Insurance and Other Reserve Funds, Cash and Securities in Provident Funds, and Other Deferred Debit Items.

PROFIT AND LOSS is the balance when the total of all items on the right side is larger than that of all items on the left side. In other words, when this account appears on the Asset side of the Balance Sheet it shows that the road has been running at a loss.

LIABILITIES.

On the LIABILITIES side the Accounts are of three general classes (1) those which show general ownership by stockholders, (2) those which show indebtedness to others than stockholders, (3) Surplus and Reserve Accounts. Stock consists of three kinds: Capital Stock, Stock Liability for Conversion of Outstanding Securities of Constituent Companies, Premiums Realized on Capital Stock. CAPITAL STOCK includes all sorts of stock issued by the company such as preferred, common, debenture, and others. Stock Liability for Conversion of Outstanding Securities of Constituent Companies comprises liability under agreements to exchange its capital stock for the outstanding securities of constituent companies

which are controlled by the company. Premiums Realized on Capital Stock is the fund which is yielded by the sale of stock whose value exceeds the par value of the stock.

MORTGAGE, BONDED, and SECURED DEBT are the indebtedness of the road to others. There are three accounts under this heading. They are Funded Debt, Receivers Certificates, Obligations for Advances received for Construction, Equipment and Betterments.

Funded Debt includes all bonds issued either by the company or by other companies, the payment of which has been assumed by the company. Receivers Certificates are those notes issued by receivers upon the responsibility of the company.

Obligations for Advances Received for Construction Equipment and Betterments is such kind of liability as money is advanced for construction, equipment and betterments by controlled companies.

WORKING LIABILITIES comprise a number of accounts. They are: Loans and Bills Payable, Traffic and Car-Service, Balances Due to Other Companies, Audited Vouchers and Wages Unpaid, Miscellaneous Accounts Payable, Matured Interest, Dividends, and Rents Unpaid, Matured Mortgage, Bonded, and Secured Debt Unpaid, Working Advances Due to Other Companies and Other Working Liabilities.

ACCRUED LIABILITIES NOT DUE includes Unmatured Interest, Dividends, Rents Payable, and Taxes Accrued.

All those liabilities such as entered on funded debt, dividends on capital stock, rents and tax on property

are counted to the time when the statement is made, though the actual payment will be made later.

DEFERRED CREDIT ITEMS, whose nature is opposite to that of Deferred Debit Items comprises Unextinguished Premiums on Outstanding Funded Debt, Operating Reserves, Liability on Account of Provident Funds, and other Deferred Credit Items. Unextinguished Premiums on Outstanding Funded Debt denotes the fund yielded by issue of bonds or notes whose value exceeds its par, but this fund should be set aside for setting off other securities which are sold on discounts. Operating Reserves is that kind of reserve fund which is for overcharge, personal injury, insurances, and other claims. Liability on Account of Provident Funds, embraces the amount of cash or book value of securities in the hands of trustees. Other Deferred Credit Items is composed of such sort of fund which cannot be entirely cleared and disposed of until further information beyond the time when the statement is made.

APPROPRIATED SURPLUS is composed of various reserved funds created for different purposes such as paying off debts, making improvement on properties, and preparing for emergency.

PROFIT and LOSS is the balance when the total of all items on the left side is larger than that of all items on the right side. In other words, if the Income Account of the road shows a Profit the Net Amount of this Profit will appear on this right hand side of the Balance Sheet.

CHAPTER IV.

THE ACCOUNTING DEPARTMENT AND ITS WORK.

We have thus far discussed the Income Account and the Balance Sheet. The former shows to the managers of the road just how its earnings and expenses have been obtained and contracted, while the latter shows to the stockholders and to the public the financial condition of the road. These two instruments are the sole means of managerial and legislative control.

We shall not investigate the work done by auditors and clerks of the company and shall conclude with some suggestions as to how the accounts should be kept to make the reports more useful to the public. Although the red tape and routine may be different from each other in various concerns, the principles are the same. All accounts which get into the Income Account and Balance Sheet are tested and checked, and it is on the Accounting Department of a road that these duties devolve. The organization of the Accounting Department varies according to the magnitude and needs of the road. The Accounting Department of the Rock Island Railroad Company assigns its work to the following responsible persons:

(1) Auditor of Passenger Receipts.

(2) Auditor of Freight Receipts.

(3) Freight Claim Agents.

(4) Auditor of Disbursements.

Some railroad companies make the Car Accountant's work one

of the divisions of the Accounting Department, but the Rock Island Railroad Company assigns this duty to the Operating Department, because the Car Accountant has more relation with Operating Department than with Accounting Department.

The Accounting Department of the Rock Island Railroad Company is headed by a comptroller who supervises the work of the entire department, next to him is a general auditor who supervises the work of other auditors such as enumerated above and keeps the general books of the company. The four divisions enumerated above are the constituents of the Accounting Department. Let us consider them one by one.

Auditor of Passenger Receipts.

The duty of the Auditor of Passenger Receipts is to audit ticket agents' accounts concerning the sale of tickets and other receipts incidental to passenger transportation and to apportion or settle the receipts with other companies in regard to the interline tickets or tickets being issued by the company to the destination of other lines, and foreign tickets or tickets being issued by other companies come to the destination of the company's line or pass on to the destination of some other line. In auditing ticket agents' accounts, the auditor requires each ticket agent to send in weekly and monthly reports stating the number of tickets sold, local and interline, and other receipts such as derived from excess of baggage, news standing, etc. The auditor also requires the conductors to send in their reports with the tickets they collected from

passengers. The amount of cash they received on board of trains is also required to report. The tickets sold by each ticket agent can be kept track of by checking up conductors' reports and tickets collected. For instance, station A sold tickets to stations B, C, and D. Then the conductors between these stations must send to the auditor the tickets they collected so that he can compare station A's report with the tickets sent in by conductors. In case the auditor cannot find the ticket which was reported by station A, a tracer can be started right away to find out why the ticket was not returned. In the case of interline tickets, each ticket agent is required to make a separate report stating the kind of tickets, such as mileage ticket, prepaid ticket, and others as the case may be, sold over other lines. The auditor checks up the report, apportions the receipts to different lines, and sends a report to every line which is interested in the transaction. At the end of each month the General Passenger Agent sends to the auditor a list of all stations to which the kind and number of tickets is sent. The auditor, basing upon this list, can assume that the station agent has made no misappropriation so far as the tickets are concerned, if the sum of the tickets sold and those left on his hand equals the number of tickets reported by the General Passenger Agent. The station agent is required to remit cash daily either to the treasurer of the company or to some local bank designated by the treasurer. Daily reports stating the amount received

from ticket agents are sent to the auditor by the treasurer. It is the duty of the auditor to keep eyes upon ticket agents as to whether the required remittance is neglected or not.

Up to this point the audit of tickets sold by ticket agents has been described. Now the audit of cash fares collected by conductors on board of trains should be taken into consideration. The Auditor of Passenger Receipts issues a certain number of rebate checks to conductors at a certain interval. The fare charged by conductors on train is usually higher than that charged by ticket office, but the amount which the passenger paid in excess of regular fare can be got back from any ticket agent by presenting the receipt issued by conductors. At the end of each run, conductors are required to send in a report stating the amount of cash he collected. The rebate check is composed of two halves, one is given to the passenger, the other is sent to the auditor with the report. Any ticket agent who cashed the rebate check is required to send the check to the auditor so that he can compare these halves sent in by conductors with those sent in by different ticket agents. The work in checking ticket agents and conductors we heretofore described is carried out by means of various reports and clerical works. Besides, personal visits to stations are often made. This is done by a person known as travelling auditor.

The duty of the travelling auditor is to visit the Freight and Ticket Agents' offices and to audit the

accounts of each office respectively from the date of the last balance given by the auditor to the date of his visit. This audit is to prevent the agents from making fictitious reports. It is also his duty to advise the agents of the suggestive method of keeping records in such a way that the work of the audit can be facilitated. The travelling auditor usually goes from station to station in regular order, but he may be sent out to some particular station to make an examination for reasons best known to the Accounting Department. When transfers of agents at local offices are made, the travelling auditor should be sent out to go over the books of the retiring agent.

Auditor of Freight Receipts.

When a shipper brings his goods to a railway station for transporting them to a certain destination, he is required to present a shipping-bill in which the names of the destination and of the consignee and the description of the articles are recorded. The freight agent, basing upon this shipping-bill, issues a triplicate receipt of which two are given to the consignor who sends one to the consignee; the freight agent keeps one on his file. Then a way-bill is made out in which are recorded the date, description of articles, weight, charges prepaid, if any, the car number in which the goods are loaded. This way-bill goes together with the freight to the receiving agent. Every month the agent sends a report to the auditor describing all consignments of freight forwarded during the month. He also sends another monthly report showing all the consignments he

received during the month together with the way-bills he collected. The auditor checks the forwarding agent's report against that which is sent in by the receiving agent. Furthermore, he goes into detail to scrutinize the way-bills as to weight and charges. If he finds anything wrong, a correction notice is sent to the agent who is asked to make corrections on his books. It is customary that the auditor holds the receiving agent responsible for the correctness of weight and charges so that the agent has to revise the way-bill as to whether the weight and charge noted on the way-bill are correct or not before he delivers the goods to the consignee. If the agent is not familiar with the charge, he may apply to the Freight Department for information. Some freight may not reach the destination until sometime in the succeeding month. In this case, the auditor cannot find in the "Received Report" of the receiving agent any record of the consignments reported in the forwarding agent's report. All those missing items are listed in a paper known as "transit". The "transit" of the current month is a supplementary one to the "Forwarded Report" of next month.

Freight, like passenger, may be classified into "local", the freight which starts and ends on the same line; "interline" or freight which originates on the local line and ends on another line; and "foreign" or freight which starts on foreign line ends on the local line or is passed on to another line. As to the audit for local, we have discussed above. Although there are two separate names

as interline and foreign in regard to freight transportation, the method of auditing in each case is the same. In either case, the forwarding agent has to issue an impression or carbon copy of the original way-bill, which is directed to the billing stations, to the Auditor of Freight Receipts of each intermediate line over which the freight passes through to its destination. The agent at each intermediate station sends a daily or weekly report to his auditor what he forwarded and received concerning the freight comes from foreign line to his line or pass on to other line. The forwarding agent should also send a report to the auditor of the billing station so that he can check the report against the one which is sent in with this way-bill by his own agent. Thus each auditor of each line which is interested in the transaction has some substantial information upon which the audit can be based. For instance, station A forwards certain packages to station E through stations B, C, D who are all foreign lines to station A. Station A has to send an impression or carbon copy of the way-bill to each freight auditor of stations B, C, D besides the one which he sends directly to the billing station E. The apportionment and settlment to and with other lines of the interline freight revenue are done in the same way as those are transacted in the Auditor of Passenger Receipts. It is also the duty of the Auditor to look after the revenue derived from transportation of milk and other revenue incidental to freight transportation. The books of freight ticket agents are also examined by the travelling auditor. The way of examining them is the same

as that of doing passenger ticket agents' books so that the further description is not necessary.

Freight Claim Agent.

Railroad companies are common carriers and therefore have to be liable for loss or damage to the goods they carry save where the damage is due to an act of God or the public enemy. In order to know whether claims presented are proper or not there must be some one to investigate every case as to where the goods are lost and the degree of the damage done by the Company. This duty devolves upon the Freight Claim Agent, one of the divisions of the Accounting Department. When one claim is presented to the agent, he first of all goes to his old record to see whether this claim has been paid or not. Then he enters the claim into a register and at the same time he gives the claim a number. Thus the investigation can be started by comparing the contents of the claim with the bill of lading. If any information is necessary, the agent sends papers to both the forwarding and billing stations and also to those intermediate points where the goods are transferred or handled. This is the very slow process. Usually several months will be consumed before the reliable information can be gathered. The investigation of claims is a tremendous task, because now-a-days the industries are so varied that the different kinds of goods handled are numberless. Therefore the work is divided according to the classification of the goods. For instance, one desk is in charge of fruit; another is in charge of

dairy products; third is in charge of household goods; and so on. After the claim is thoroughly investigated and the facts are ascertained, then the clerk values whether the charge claimed is reasonable or not; if it is not, the agent insists on reducing the claim to reasonable amount. In settling such sort of a question some agreement or compromise between the agent and the claimant is necessary. The payment for loss or damage is made by the agent drawing a check on the treasurer of the road. Attached to the check there is one receipt which is provided for the claimant's signature.

Goods which are either lost or damaged in their passage over two or more lines have the claim distributed between the lines interested. This is done according to the code of rules of the association known as the Freight Claim Association, composed of nearly all the railroads and steamship companies of this country and Canada. It is the duty of the agent to make settlement with other roads monthly by statement and draft with regard to the part of payment for claims each road should be responsible for. It is also the duty of the Freight Claim Agent to ascertain the cause of loss or damage and to offer suggestions as to the improvement of the handling of the traffic so that further loss and damage can be prevented in the future.

Auditor of Disbursements.

Railway companies spend tens of millions of dollars in carrying on their business. If payments are made with even a small amount of carelessness, the results

may cause great misapplication of funds. For this reason, in the Accounting Department of each road is established a division known as the Auditor of Disbursements whose duty it is to examine any expenses regardless of the amount before the actual payment is made by the company. There are three instruments by which the payments are made. They are vouchers, drafts and pay-rolls. A voucher is a paper in which is vouched the cause for which the money is spent with the attachment of the certification of various officials showing that the expense is a proper one for the company to assume. Payments by vouchers are those expenses which need careful approval from various officials before the vouchers are sent to the auditor for examination. For instance, a certain department is going to spend some money, it first of all makes out a voucher stating the reason for which the money is spent and then sends this document to various officials whose approval is needed. Lastly, the voucher is sent back to the department originating it and is signed by the head of the department; from there it is sent to the auditor for record and approval. Payments by draft are those which need immediate attention such as payment for personal-injury claims, claims for loss by fire and settlement for loss and damage of freight. As such claims are so urgent that they cannot be audited before payments are made, the man by whom drafts are drawn should be made responsible. Payments through the medium of pay-rolls are usually made to employees of the company. A pay-roll is a paper on which is recorded: name, occupation, time worked,

rate per hour, deductions (if any, and amount due.

The instruments through which a road pays all expenditures has been considered. Now let us turn our attention to the audit of these instruments. When a voucher comes to the Auditor of Disbursements, it should be first of all referred to the index in which is recorded the description of old vouchers to see whether or not this voucher has the repetition of some old one. The next step is to register it and to give it an auditing number. Then it can be passed to some checking-clerk whose duty it is to check item by item against some supporting paper attached to. After it is thoroughly examined it is entered into a ledger charging to some person for whom the voucher is made. For instance, a voucher is made for paying a certain amount of money for materials demanded by an engineer, to whom the voucher is charged until his returns come in as to how he used the materials, which are then distributed to various accounts according to the Inter-State Commerce Commission Classification. As previously stated it is not feasible to audit drafts before payment is made. Pay-rolls require a great deal of time to audit before payment is made. The time-rolls or time-book are the basis from which pay-rolls are made out. In auditing a pay-roll, the time-slip or other report of work performed should be checked. The time-keeper enters the time-slip daily into a time book and foots up the time-slip at the end of the month so that he can tell how many hours' work is performed. Since the rate per hour is definite, the money which should be paid for the work performed can be readily known. Pay-rolls

for regular monthly men are also ascertained by checking against the previous month's roll as to the amount of wages and kind of occupation. If the wage is increased, authorities to approve the increase are ascertained.

Although every item has to be verified either by the Auditor of Passenger Receipts, the Auditor of Freight Receipts, the Freight Claim Agent, or the Auditor of Disbursements as the case may be, before it is entered into a definite account, the general books concerning the financial standing of the company as a whole are kept by the highest officer of the Accounting Department, from whom the executive can get information about the financial condition of the road whenever he wants to. The general books of the company are chiefly: the General Ledger, Cash Book, Sub-ledgers of Operating Expenses and Construction, Interline Ticket, Freight and Mileage Accounts, Interline Claims, and others. "The duties of the highest officer of the Accounting Department", says Mr. May, the comptroller of the Rock Island Railway Company, "may be classified under three headings: (1) properly to safeguard and account for all of the revenue of the company; (2) to present to the President and other officers a true history of what has been accomplished, more or less in detail, according to conditions; (3) to call the attention of the President or other officers to any unfavorable or favorable conditions or circumstances which may come to his knowledge."

CHAPTER V.

CONCLUSION.

The correctness of accounts of a railway company is of vital importance to the public as well as to the company itself. So far as the finance of a road as a whole is concerned, the methods of keeping accounts which are now prevailing may be right. But it seems to the writer that no company has yet any idea of keeping its accounts on a cost basis. Of course, the study of cost accounts is a very new subject as it has not been thought of until 1832 when Charles Babbage published "Economy of Manufacture" in which he discussed the subject, but it is now recognized universally that the cost system is absolutely necessary to the success of modern manufactories. Competition in business can never be done away with as it protects the community from being unreasonably robbed of its money by monopoly. The government of this country has hitherto well protected its people by doing away with the pooling between railway companies and by passing the Sherman Act of 1890, which puts trusts out of existence. Since competition exists anywhere in the business world, the manufacturer in order to be able to compete with his rivals must know himself first about the real cost of articles he manufactures, so that he will not compete blindly with others at the expense of his capital. In carrying out this purpose, the manufacturer should be well informed

what constitutes the cost. As the subject is still recent, different authorities have different opinions. Mr. Bean says, "Cost may be represented as follows:

"Cost $\begin{cases} \text{Material} \\ \text{Labor} \\ \text{Burden"} \end{cases}$

The constituents of Burden, Mr. Bean ennumerates as follows:

1. Indirect Labor
2. Heating, Lighting and Rent of Building
3. Taxes
4. Insurance
5. Depreciation
6. Upkeep

In determining the cost, Material and Labor are not so difficult to be measured as Burden, because the latter is common to all articles manufactured, therefore, it is necessary to have some arbitrary basis to apportion the expenses on Burden to each article manufactured. There are several methods in apportioning the expenses on Burden, and discussion as to merits and demerits has been taken place by different authorities, but this is purely a cost accounting problem so it will be omitted here.

The railroad business, in the writer's opinion, is not very much different from that of a manufacturer, the former is engaged in manufacturing transportation and the latter the articles. There is no reason why railway companies do not keep their accounts on the cost system as manufacturers do. It will scarcely be too much to say

that the cost system is more important to railway companies today than to manufacturers, because the public often complains that railway companies enrich themselves by charging too much on freight rates and passenger fares. In order to avoid such misunderstanding among the people, railway companies should keep their accounts on cost basis so that the real cost of transportation can be shown to the public. Furthermore, the Inter-State Commerce Commission has now the right to interfere with the making of rates and fares. Railway companies in order to protect themselves from losing money should know exactly the cost of transportation. In case the Inter-State Commerce Commission compells them to lower their rate and fares, the real cost of transportation can be taken as a firm ground to argue with the authorities. For the purpose of reference in making rates and fares, the cost system should be introduced into railway companies. Not only that, the cost system can throw light upon the administration too, railroad managers can find out whether or not the road is running in an economical way from the cost accounts kept by different departments.

The necessity of introducing cost system into railway companies has been pointed out. To the carrying out of the cost system, the writer wishes to offer several suggestions. In the first place, earnings and expenses should be separated from each state over which the line passes. Thus the company can have some idea of transporting goods and passengers on rates and fares, prescribed by the state, which whether or not gives renumeration to the company. In the second place, the earnings and expenses

derived from and spent for freight should be separated from those derived from and spent for passengers. With the earnings it is not difficult to deal. It can be done by simply not mixing the receipts from freight from the income from passengers. It is true that it is very difficult to apportion the operating expenses and expenditures spent on general administration between the freight and passengers. This is the same difficulty which has been happened to the manufacturing cost. It has been done away with by using some arbitrary methods. Since the manufacturing company has availed itself of the arbitrary methods, there is no reason why the railway company should not avail itself of the same methods. In the third place, the capital account should be kept strictly distinct from other accounts. In other words, the accountant of the company should be well informed how much the capital has been invested so that he can decide upon the percentage of profit on capital which he would like to get from the business of transportation. If the railway accounts are kept in such manner as suggested above, the railway officials will not be confronted with the hard question of making rates and fares which has not yet been solved today. Of course, this is a tremendous task to inaugurate the cost system in railway companies, because the red tape and routine are much more complicated than those in manufacturing companies. Yet now is the time for the accountants and economists to take up this subject to study as those studied the question of manufacturing cost in early years. If the subject is taken up to study by

prominent accountants and economists, it will not be long before the problem can be solved.